

Vraag 1 / Question 1

Noem die sewe stappe van die kennis ingenieurswese proses.

Name the seven steps of the knowledge engineering process. [7]

- 1) Identify the task (1).
- 2) Assemble the relevant knowledge (1).
- 3) Decide on a vocabulary or predicates, functions, and constants (1).
- 4) Encode general knowledge about the domain (1).
- 5) Encode a description of the specific problem instance (1).
- 6) Pose queries to the inference procedure and get answers (1).
- 7) Debug the knowledge base (1).

Vraag 2 / Question 2

Bepaal die mees algemene vereniger van die volgende uitdrukkings en gee die substitusies. As unifikasie misluk, verduidelik waarom. Toon al jou stappe duidelik aan.

Determine the most general unifier of the following expressions and give the substitutions. If unification fails, explain why. Show all your steps clearly.

- 1) $P(A, F(y))$ en / and $P(x, F(G(x)))$ [5]
- 2) $P(A, F(y))$ en / and $P(x, F(B))$ [4]

1. Unify $P(A, F(y))$ and $P(x, F(G(x)))$

$$\text{UNIFY}(P(A, F(y)), P(x, F(G(x)))) = \{y / G(x)\}$$

$$\therefore P(A, F(G(x))) \text{ and } P(x, F(G(x)))$$

$$\text{UNIFY}(P(A, F(G(x))), P(x, F(G(x)))) = \{x / A\}$$

$$\therefore P(A, F(G(A))) \text{ and } P(A, F(G(A)))$$

$$\therefore P(A, F(G(A))) \text{ is the unified expression.}$$

$$\therefore \text{The most general unifier is } \{y / G(x), x / A\}.$$

2. Unify $P(A, F(y))$ and $P(x, F(B))$

$$\text{UNIFY}(P(A, F(y)), P(x, F(B))) = \{x / A\}$$

$$\therefore P(A, F(y)) \text{ and } P(A, F(B))$$

$$\text{UNIFY}(P(A, F(y)) \text{ and } P(A, F(B))) = \{y / B\}$$

$$\therefore P(A, F(B)) \text{ and } P(A, F(B))$$

$$\therefore P(A, F(B)) \text{ is the unified expression.}$$

$$\therefore \text{The most general unifier is } \{x / A, y / B\}.$$

Totaal [16] / *Total* [16]